EXECUTIVE OFFICE of ENVIRONMENTAL AFFAIRS

Cleaner Technology and Energy Efficiency:
Structuring a Competitive Advantage

Date: Thursday, April 5th, 2007
Location: Holiday Inn, Boxborough
Time: 7:30 A.M. – 4:00 P.M.

Office of Technical Assistance and Technology

AGENDA

7:30 – 8:30	Registration and Continental Breakfast
8:30 – 8:45	Introduction and Overview *Paul Richard, Office of Technical Assistance and Technology*
8:45 – 9:15	Turning around a Business – The Mastex Success Story *Larry Vincent, Mastex Industries*
9:15 – 9:45	Welcome *Ann Berwick, Undersecretary for Energy*
9:45 – 10:15	BREAK and Exhibit Viewing
10:15 – 10:45	Energy Efficiency, Conservation, and Load Management *Michael McAteer, National Grid* *Eric Winkler, ISO New England*
10:45 – 11:30	Designing for Sustainability *Paul Anastas, Yale Center for Green Chemistry and Green Engineering*
11:30 – 12:00	Exhibit Viewing
12:00 – 1:00	LUNCH *Speaker – Greg Watson, Assistant Secretary for Clean Energy Technology*

1:00 – 2:15 Breakout Session I

1A. Technologies for the Textile and Paper Industries

Textile and paper companies face increasing competitive challenges while their operating costs continue to rise. This session emphasizes advances in digital printing and nanotechnology that could help Massachusetts businesses develop market niches. It will also include a discussion of possible routes for the beneficial reuse of cellulosic wastes.

Moderators: James Noel, Crane & Co. and Dr. Augustus Ogunbameru, OTA

Speakers:

- Ink Jet Printing of Textiles
  Ed Chrusciel, FUJIFILM Dimatix
- Bi/Tri-component Fiber Extrusion – A New Method to Produce High Performance Fibers
  Jean Herbert, Natick Soldier Research, Development, and Engineering Center
- Forest Bioproducts Research Initiative
  Dr. Hemant Pendse, Department of Chemical and Biological Engineering, University of Maine

1B. Technologies for the Metal and Electronics Industries

Novel deposition and circuit formation techniques are quickly advancing, but not all technologies are technically proficient and environmentally equal. This session will highlight cleaner processing technologies that enable companies to achieve higher product quality.

Moderator: Jim Cain, OTA

Speakers:

- Lead-free Solders for Nanowire Assembly and Integration
  Dr. Zhiyong Gu, Department of Chemical Engineering, University of Massachusetts – Lowell
- Ink Jet Technology as a Precision Deposition Tool
  Dr. Linda Creagh, FUJIFILM Dimatix
- Supercritical Fluid Deposition of Metal Films and Coatings
  Christos Karanikas, Department of Chemical Engineering, University of Massachusetts – Amherst

1C. Energy Auditing and Renewable Energy

The price of energy in Massachusetts has increased substantially with costs expected to rise. This session will present methods for identifying energy conservation and onsite renewable energy opportunities.

Moderator: Dr. John Raschko, OTA

Speakers:

- Clean Distributed Generation Opportunities and Funding Sources
  Jon Abe, Renewable Energy Trust – Massachusetts Technology Collaborative
- Energy Auditing - Compressed Air Systems
  Ed Lagoy, Lenox Saw
- The Massachusetts Industrial Assessment Center Energy Auditing Program
  Dr. Beka Kosanovic, Center for Energy Efficiency and Renewable Energy
- Energy Star Programs for Industry
  Bill White, U.S. E.P.A. – Region 1

1D. Financial and Technical Assistance for the Implementation of New Technologies

While many cleaner technologies provide both economic and environmental benefits to a company over time, the capital costs of acquiring new technologies can be prohibitive. This session will outline financial and technical assistance programs that can reduce these barriers and help pave the way to the adoption of cleaner technologies.

Moderator: Paul Richard, OTA

Speakers:

- Incentives for Implementing Energy-Saving Technologies
  Kevin Keena, National Grid
  Andrew Coffin, NSTAR
- Business Resource Team: Massachusetts Incentives
  Claire O'Neill, Massachusetts Office of Business Development
- Loan Programs for Small Business Improvements
  Chris Perkins, Economic Stabilization Trust

1E. Biopharmaceuticals – Improving Process Efficiency

This will be an open session coordinated by the American Chemical Society Green Chemistry Institute Pharmaceutical Roundtable. There is a belief that large molecule drugs such as proteins, vaccines and monoclonal antibodies (MAbs) are green by design but a closer examination suggests that water and energy consumption, waste generation and process robustness may benefit from looking at these drugs through a green chemistry and engineering lens. Reports of green chemistry thinking are scarce so far but this dialog is beginning within the Roundtable and some preliminary thoughts will be presented to catalyze a much broader and deeper analysis and discussion.

Moderators: Julie Manley, ACS Green Chemistry Institute and Morgan Mihok, OTA

Speaker:

- Green Chemistry and Engineering Concepts Applied to Large Molecule Biopharmaceutical Drugs – Preliminary Thoughts
  Dr. Berkeley Cue, ACS GCI Pharmaceutical Roundtable

2:15 – 2:45 **BREAK and Exhibit Viewing**

2:45 – 4:00 **Breakout Session II**

2A. Water – Solar Hot Water and Heat Recovery Systems

Water can be expensive, whether during acquisition, disposal, and heating. Heat recovery systems and solar hot water systems present ways to substantially reduce the energy cost component.

Moderator: Michelle Miilu, OTA

Speakers:

- Financing Cleaner Technology with Power Purchase Agreements
  Patty Hargreaves, Mondial Energy, Inc
- Solar Solutions
  Frederick Paris, Alternate Energy Solutions
- Waste Water Heat Recovery Systems
  Nick Rivard, Claremont Flock

2B. Cleaning and Testing

Time is of the essence for business. In this session, learn how to quickly assess the toxicity of your water, sediment, and soil samples with the Microtox® testing system and how to evaluate alternative cleaning solutions with TURI's CleanerSolutions database, a one-stop, performance-based shop for comparing cleaning solutions.

Moderator: Cecile Gordon, OTA

Speakers:

- Pick One: How to Replace Your Current Cleaning Solvent Using CleanerSolutions
  Jason Marshall, Toxics Use Reduction Institute
- Microtox® Rapid Assessment Technologies
  Dr. Oscar Pancorbo, MassDEP

2C. Technologies for the Plastic and Coating Industries

Issues with product sourcing and solvent use make the reduction of environmental impacts difficult for the plastics and coatings industries. Presenters will discuss the production and utility of biobased plastics and the development of VOC-free coating processes.

Moderator: Scott Fortier, OTA

Speakers:

- No-VOC Latex Coating System
  Dennis Connelly, Churchill Coatings Corporation
- Metabolix Natural Plastic: A Disruptive Technology for a Sustainable Future
  Ben Locke, Metabolix
- Thermal Oxidizer Shut-down by Eliminating Isopropanol in a Major Coating Formulation
  Jack Hill, Vacumet Corp.

2D. Nanotechnology and New Materials for Product Development

Research in nanotechnology has been progressing rapidly. It is acknowledged that the next major hurdles are the development and implementation of nanotechnology in industrial processes. This session will highlight promising technologies that may yield new products or markets for Massachusetts businesses.

Moderators: Dr. Joey Mead, UMass Lowell and Morgan Mihok, OTA

Speakers:

- Nanomanufacturing of New Materials
  Dr. Joey Mead, NSF Nanoscale Science and Engineering Center for High-rate Nanomanufacturing, University of Massachusetts – Lowell
- Nanospheres from Polysaccharides for Drug Delivery
  Dr. Stephen McCarthy, Biodegradable Polymer Research Center, University of Massachusetts – Lowell
- Robotic Production of Biomimetic Composites
  Dr. Paul Calvert, Department of Materials and Textiles, University of Massachusetts – Dartmouth